



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,702	05/25/2001	Thorbjorn Andersson	027650-930	2294

21839 7590 10/21/2004

BURNS DOANE SWECKER & MATHIS L L P
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER

SIMONE, CATHERINE A

ART UNIT	PAPER NUMBER
----------	--------------

1772

DATE MAILED: 10/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/856,702	Applicant(s) ANDERSSON ET AL.	
	Examiner Catherine Simone	Art Unit 1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-5, 10-21, 29, 30, 32 and 34-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-5, 10-21, 29, 30, 32 and 34-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/29/04 has been entered.

Withdrawn Objection

2. The objection to the Specification of record in the Office Action mailed 4/1/04, Page 2, Paragraph #1 has been withdrawn due to the Applicants amendment filed 6/23/04.

Withdrawn Rejection

3. The 35 U.S.C. 112 rejection of claims 2-21,29, 30 and 32-38 of record in the Office Action mailed 4/1/04, Page 2, Paragraph #3 has been withdrawn due to the Applicants amendment filed 6/23/04.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 2-5, 10-14, 16, 29, 30, 32-35 and 38** are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (5,500,303) in view of Rolle et al. (WO 97/29150).

Regarding **claims 4, 10, 32 and 33**, Anderson discloses a multilayer structure for packaging comprising an intermediate layer of a foamed polymeric material (Fig. 11, #110) and on each side of the expanded polymer layer, a gas barrier layer (Fig. 11, #20 and #30). However, Anderson fails to disclose the foamed polymeric material being an expanded polymeric material comprising a first rigid component consisting of high melt-strength polypropylene and a second ductile component consisting of a general-purpose grade of polypropylene wherein the expanded polymer has at least about 500 cells/mm³ or 1000 cells/mm³ and the mixing ratio is less than 1:1 and about 1:1.5. Rolle et al. teaches that it is old and well-known in the analogous art to have an expanded polymeric foam material comprising a first rigid component consisting of high melt-strength polypropylene and a second ductile component consisting of general-purpose grade of polypropylene (see page 6, lines 2-6) having at least about 500 cells/mm³ or 1000 cells/mm³ (see page 5, lines 9-11) for the purpose of producing a layer of expanded foam material in a multilayer structure for packaging. Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have the foamed polymeric material in Anderson be an expanded polymeric foam material comprising a first rigid component consisting of high melt-strength polypropylene and a second ductile component consisting of general-purpose grade of polypropylene, and having at least about 500 cells/mm³ or 1000 cells/mm³ as suggested by Rolle et al. in order to produce a layer of expandable foam material in a multilayer structure for packaging.

Rolle et al. does teach an expanded foam material comprising a first rigid component consisting of high melt-strength polypropylene and a second ductile component consisting of general-purpose grade of polypropylene (see page 6, lines 2-6) having at least about 500 cells/mm³ or 1000 cells/mm³ (see page 5, lines 9-11). However, Rolle et al. fails to teach the mixing ratio of about 1:1.5. Rolle et al. does, however, teach a weight percentage of the high melt strength polypropylene as much as possible towards 50% (see page 6, lines 3-5). Therefore, the optimum range for the mixing ratio would be readily determined through routine experimentation by one having ordinary skill in the art depending on the desired end results as shown by Rolle et al. Thus, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have provided the expanded polymeric foam material in Rolle et al. with a mixing ratio of about 1:1.5, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art in absence of showing unexpected results. MPEP 2144.05.

Furthermore, Anderson fails to disclose the specific resistance/rigidity of at least 100 mN and the material of the gas barrier layer having a specific oxygen gas permeability of at most about 2000 cm³/m², at 23°C and 0% RH, per 1 µm thickness, during 24 hr. at 1 atm. However, Anderson discloses the calculation of the resistance of the barrier layer (col. 8, lines 66-68), and the oxygen gas permeability (col. 2, lines 2-7). Therefore, one of ordinary skill in the art would have recognized that the resistance/rigidity and the oxygen gas permeability are deemed cause effective variables in the multilayer structures as shown by Anderson. Thus, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have optimized the value of a cause effective variable such as resistance/rigidity and oxygen gas

permeability in Anderson since Anderson discloses the calculation of the resistance of the barrier layer and the oxygen gas permeability, and further, it has been held that to determine the optimum value of a cause effective variable such as resistance/rigidity and the oxygen gas permeability would be through routine experimentation in the absence of a showing of criticality in the claimed ranges. *In re Boesch*, 205 USPQ 215 (CCPA 1980), *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Regarding **claim 2**, the outermost layers comprise a heat sealable thermoplastic polymer (see col. 15, lines 33-35). Regarding **claim 3**, the expanded polymer layer in its cells and/or open cavities is filled with an anaerobic gas (see col. 14, lines 2-4). Regarding **claim 5**, the expanded layer has cells, which are inherently closed without connection between the cellular cavities. Regarding **claim 11**, the gas barrier layer comprises polyvinylidene chloride (PVDC) (see col. 4, line 66). Regarding **claim 12**, note a homogeneous layer on each side of the expanded polymer layer comprising a polymer selected from a group as recited in claim 12 (see col. 4, lines 65-67 and col. 5, line 1). Regarding **claim 13**, the gas barrier layers on each side of the expanded polymer layer have a thickness and comprise polyamide (see col. 4, lines 52-54 and lines 65-67). Regarding **claim 16**, the gas barrier layer is directly bonded to the expanded polymer layer (see col. 13, lines 39-42). Regarding **claims 29 and 30**, note dimensionally stable packaging container manufactured from the multilayer structure (see col. 2, lines 29-32). Regarding **claims 34 and 35**, note the material of the gas barrier layers is polyamide (PA) (see col. 4, lines 65-67).

Regarding **claim 14**, the limitation “in one operation by means of co-extrusion of the layers” is a method of production and therefore does not determine the patentability of the

product itself. The method of forming the product is not germane to the issue of patentability of the product itself. MPEP 2113.

Regarding **claim 38**, Anderson discloses a multilayer structure for packaging comprising an intermediate layer of a foamed polymeric material (Fig. 11, #110) and on each side of the expanded polymer layer, a gas barrier layer (Fig. 11, #20 and #30). However, Anderson fails to disclose the foamed polymeric material being an expanded polymeric material comprising a first, rigid component consisting of HDPE and a second, ductile component consisting of LDPE wherein the mixing ratio is 1:1.5. Rolle et al. teaches that it is old and well-known in the analogous art to have an expanded polymeric foam material comprising a first rigid component and a second ductile component (see page 6, lines 2-6), but fails to teach the first, rigid component consisting of HDPE and the second, ductile component consisting of LDPE. It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have modified the first, rigid component in Rolle et al. to be of HDPE and the second, ductile component in Rolle et al. to be of LDPE, since it had been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice in absence of showing unexpected results. *In re Leshin*, 125 USPQ 416.

6. **Claims 15, 17, 18, 20, 21, 36 and 37** are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (5,500,303) in view of Rolle et al. (WO 97/29150) and in view of Bauer et al. (5,093,164).

Anderson and Rolle et al. disclose the claimed invention, but both fail to disclose a paper layer and a gas barrier layer comprising polyvinyl alcohol (PVOH) and an ethylene acrylic acid

copolymer (EAA). Bauer et al. teaches a paper layer (see col. 2, lines 55-57) and a gas barrier layer comprising polyvinyl alcohol (PVOH) and an ethylene acrylic acid copolymer (EAA) (see col. 4, lines 17-20 and col. 5, line 48) in the art for the purpose of forming a multilayer packaging material having good barrier to transmission of one or more gases.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have provided a paper layer to each side of Anderson's expanded layer as suggested by Bauer et al. and provided the gas barrier layer in Anderson with polyvinyl alcohol and an ethylene acrylic acid copolymer (EAA) as suggested by Bauer et al. in order to provide a multilayer packaging material having good barrier to transmission of one or more gases.

Furthermore, Bauer et al. fails to disclose the paper layer having a surface weight of between about 30 g/m² and about 60 g/m². However, Bauer et al. does teach a paper layer having a surface weight of 65 g/m² (see col. 12, line 49). Therefore, one of ordinary skill in the art would have determined the surface weight of the paper layers through routine experimentation depending on the desired end results as shown by Bauer et al. Thus, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have the paper layers in Bauer et al. to have a surface weight of between about 30 g/m² and about 60 g/m², since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art in absence of showing unexpected results. *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980).

Regarding **claim 18**, the limitation "by means of liquid film coating technology" is a method of production and therefore does not determine the patentability of the product itself. The

method of forming the product is not germane to the issue of patentability of the product itself.
MPEP 2113.

7. **Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (5,500,303) in view of Rolle et al. (WO 97/29150) and in view of Bauer et al. (5,093,164) and in view of Kato et al. (5,527,622).

Anderson, Rolle et al. and Bauer et al. disclose the claimed invention except for the gas barrier polymer material comprising a carboxylic acid group. Kato et al. teaches a gas barrier polymer material comprising a carboxylic acid group (see col. 2, lines 30-40) in the art for the purpose of providing high heat-sealing strength in a packaging laminate.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have provided the gas barrier polymer layer in Bauer et al. with a carboxylic acid group as suggested by Kato et al. in order to provide high heat-sealing strength in a packaging laminate.

Response to Arguments

8. Applicant's arguments filed 7/29/04 have been fully considered but they are not persuasive.

Applicants argue that "First, the Rolle et al. disclosure does not literally disclose the claimed mixing ratio of rigid component:ductile component of about 1:1.5. Second, the Rolle et al. disclosure does not connote the claimed mixing ratio of rigid component:ductile component of about 1:1.5. The use of the language "as much as possible" clearly connotes that the "toward 50%" language is a goal that is not achieved. Further, the examples offered at page 6, lines 9-14

reinforce this interpretation. Here, Rolle et al. indicates that the preferred values are 60% to 90% and 60% to 80%. Thus, it is not the lower percentage that is moved toward 50%, but rather the higher, or more prevalent component, percentage that is moved from close to 100% toward 50%. From the disclosure in Rolle et al., at all times the rigid component is more than 50%, e.g., no less than 60%.”

However, it is to be pointed out that Rolle et al. teaches lowering the percentage of the rigid component (high melt strength polypropylene) “as much as possible towards 50%” (see page 6, lines 3-5). Also, Rolle et al. teaches the “polypropylene blend containing between 50 and 100% high melt strength polypropylene” (see page 8, claim 1, lines 10-12). Therefore, Rolle et al. discloses the rigid component (high melt strength polypropylene) to be 50% and less than 60%. Furthermore, one of ordinary skill in the art would have determined the optimum range for the mixing ratio through routine experimentation depending on the desired end results as shown by Rolle et al. Thus, it would have been obvious to one of ordinary skill in the art at the time the applicant’s invention was made to have modified the expanded polymeric foam material in Rolle et al. to have a mixing ratio of about 1:1.5, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art in absence of showing unexpected results. MPEP 2144.05.

Conclusion

9. This is a request for continued examination of applicant's earlier Application. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the

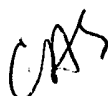
earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

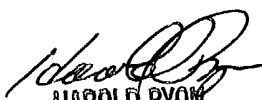
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Catherine Simone whose telephone number is (571)272-1501. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on (571) 272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Catherine Simone
Examiner
Art Unit 1772
October 15, 2004


HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772 10/15/04